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The Case | Generalized petechiae and acute renal failure

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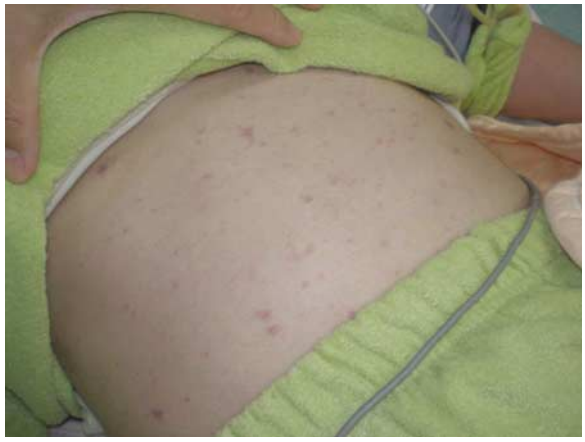

Figure 1 | Generalized petechiae were noted over the trunk.

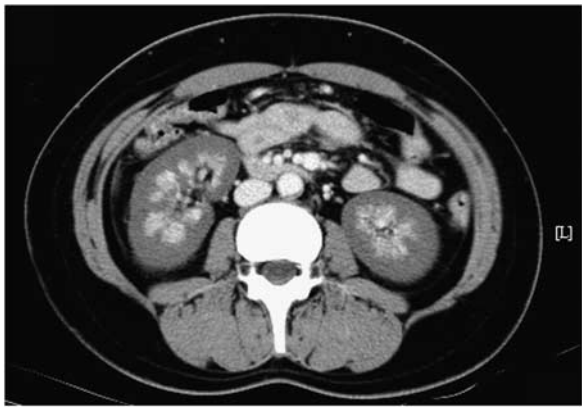

Figure 2 | Contrast-enhanced abdominal CT.

A 31-year-old woman presented with fever, chills, and abdominal pain for 1 day. On examination, she was found to have a temperature of 35.3 °C, pulse rate of 109 beats per minute, and blood pressure of 123/95 mm Hg. Generalized petechiae (Figure 1) were noted over the trunk and extremities. The abdomen was soft without rebound tenderness. Pertinent laboratory data were as follows: blood urea nitrogen 14 mg per 100 ml, creatinine 2.1 mg per 100 ml, sodium 134.2 mEq l^{-1}, potassium 2.54 mEq l^{-1}, aspartate aminotransferase 49 IU l^{-1}, alanine aminotransferase 3 IU l^{-1}, and total bilirubin 0.75 mg per 100 ml. The patient had a profound metabolic acidosis with pH of 7.190, bicarbonate of 13 mmol l^{-1}, and lactate of 9.7 mmol l^{-1}. White blood cell count was 7900 μl^{-1} (with 20% band form), hemoglobin 15 g μl^{-1}, and platelet count was 18 000 μl^{-1}. There was a marked coagulopathy with prothrombin time >80 s and activated partial thromboplastin time >200 s, fibrinogen level of 92.1 mg per 100 ml (normal 200–400), fibrin degradation product levels of 532.9 $\mu g\,ml^{-1}$ (normally <5), and D-Dimer level of 85131.6 ngFEU ml^{-1} (normally <500). Abdominal computed tomography (CT) (Figure 2) was performed to look for a focus of infection.

What abnormality is seen on the CT? What is the clinical diagnosis?

SEE NEXT PAGE FOR ANSWERS

The Diagnosis | Bilateral renal cortical necrosis in meningococcemia

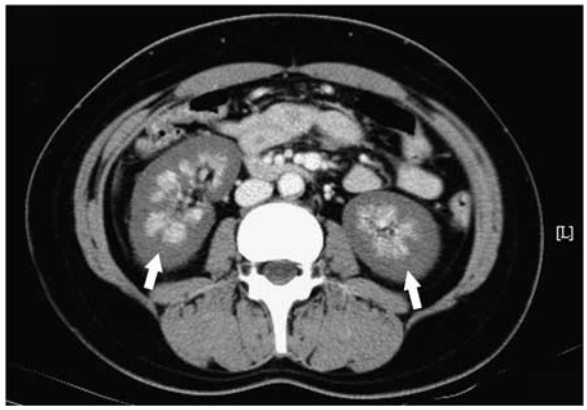

Figure 3 | Contrast-enhanced abdominal CT showed non-opacification of the renal cortex (arrows) sparing the subcapsular, juxtamedullary, and medullar areas, which is typical for renal cortical necrosis.

The abdominal CT showed diagnostic finding of renal cortical necrosis, with non-opacification of the renal cortex (Figure 3, arrows) sparing the subcapsular, juxtamedullary, and medullar areas. The patient deteriorated rapidly despite antibiotic treatment, fluid resuscitation, and hemodialysis, and expired within 11 h of presentation. Her blood culture yielded *Neisseria meningitidis* 3 days later.

Renal cortical necrosis is a rare cause of acute renal failure secondary to ischemic necrosis of the renal cortex caused by vascular spasm, microvascular injury, or intravascular coagulation. Renal cortical necrosis accounts for only 2–4% of all cases of acute renal failure in adults.[1–2] Renal cortical necrosis is mainly associated with obstetric complications, followed by snake bite, hemolytic uremic syndrome, renal graft rejection, acute pancreatitis, septicemia, and trauma.[1] Dialysis is required in most survivors.[2] The findings on abdominal CT are often diagnostic, although renal biopsy is the diagnostic gold standard.[1,3]

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